US007059932B1

(12) **United States Patent**
Tobias et al.

(10) **Patent No.: US 7,059,932 B1**
(45) **Date of Patent: Jun. 13, 2006**

(54) **SPINNING TOY**

(75) Inventors: **Jacqui Tobias**, Bentleigh East (AU); **Paul Charlwood**, Melbourne (AU)

(73) Assignee: **Moose Enterprise Pty Ltd**, Bentleigh East Victoria (AU)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/512,032**

(22) PCT Filed: **Apr. 27, 2004**

(86) PCT No.: **PCT/AU2004/000539**

§ 371 (c)(1),
(2), (4) Date: **Jul. 19, 2005**

(87) PCT Pub. No.: **WO2004/091745**

PCT Pub. Date: **Oct. 28, 2004**

(51) **Int. Cl.**
A63H 1/30 (2006.01)
(52) **U.S. Cl.** **446/250**
(58) **Field of Classification Search** 446/247–254, 446/235–236, 259, 261–263
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,337,334	A *	12/1943	Lohr	446/250
6,354,905	B1 *	3/2002	Haines et al.	446/250
6,599,165	B1 *	7/2003	Van Dan Elzen	446/250

FOREIGN PATENT DOCUMENTS

GB	186281	9/1922

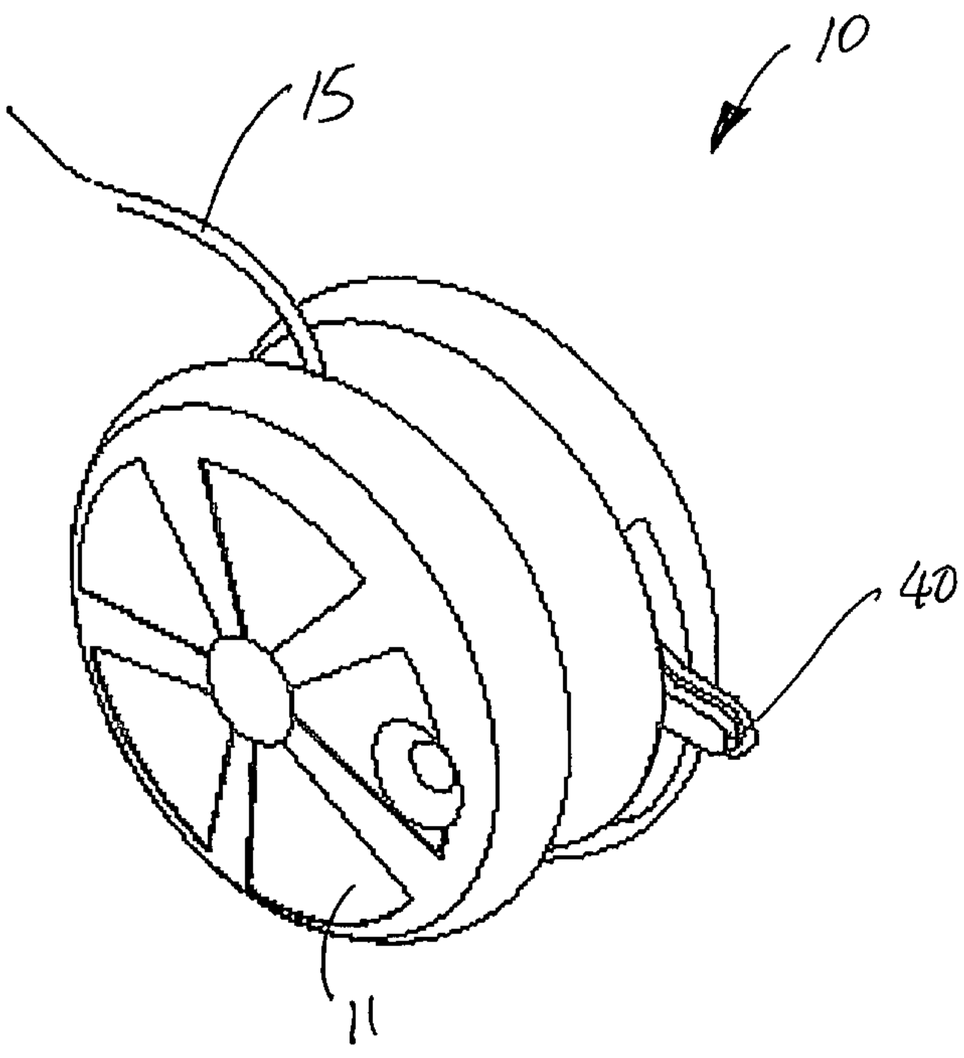
* cited by examiner

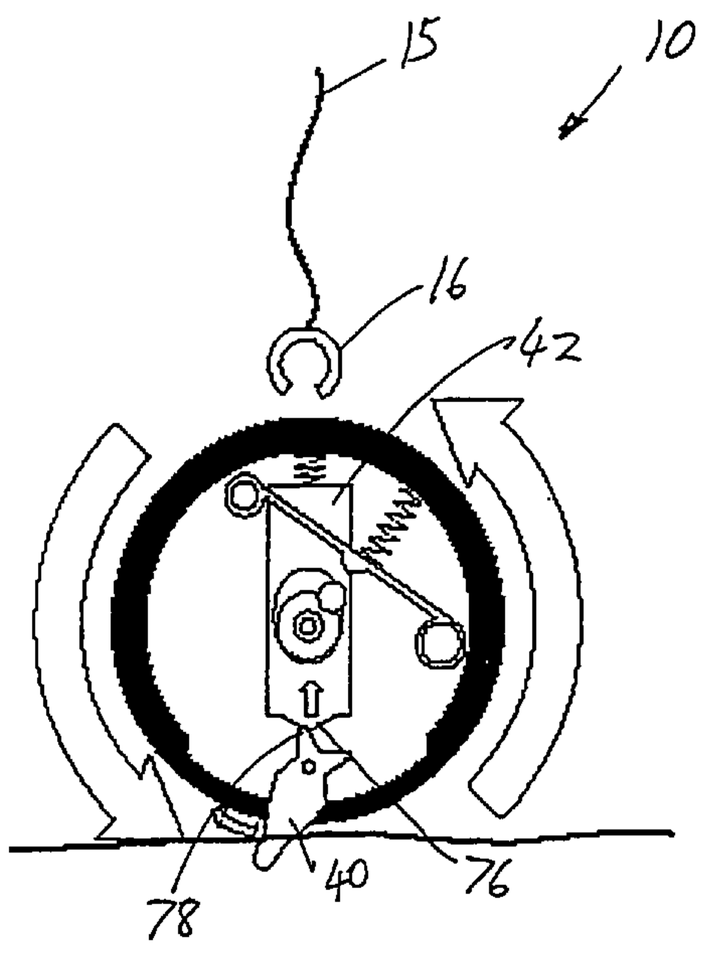
Primary Examiner—Eugene Kim
Assistant Examiner—Alyssa M. Lowen
(74) *Attorney, Agent, or Firm*—The Webb Law Firm

(57) **ABSTRACT**

A spinning toy comprises a pair of spaced disc bodies connected by a transverse shaft forming a gap therebetween. A sting is attached to the shaft in the gap and the toy can be spun on the string. A release mechanism releases the attachment of the string on the shaft while the toy is spinning.

20 Claims, 6 Drawing Sheets





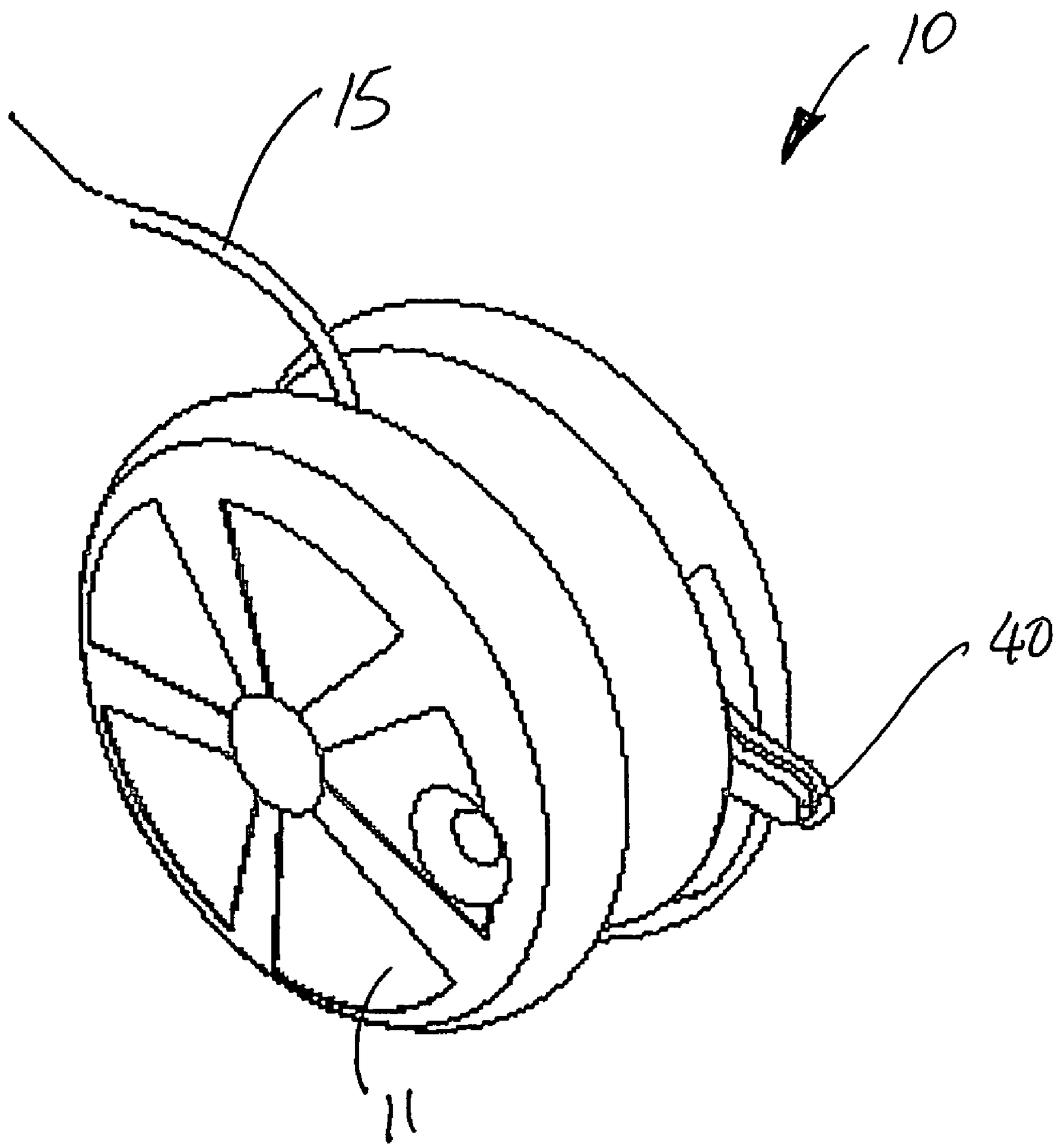


FIGURE 1

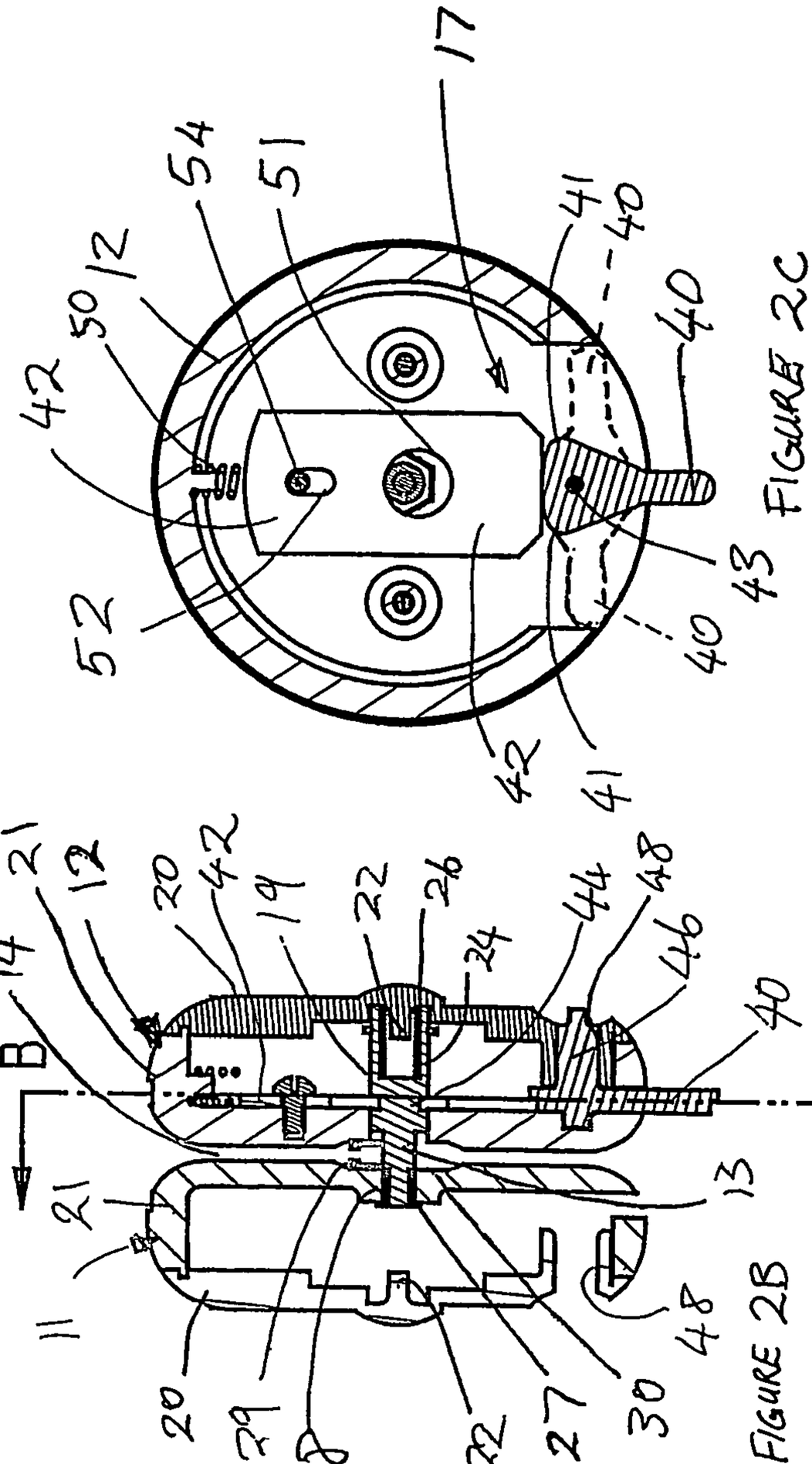


FIGURE 2C

FIGURE 2B

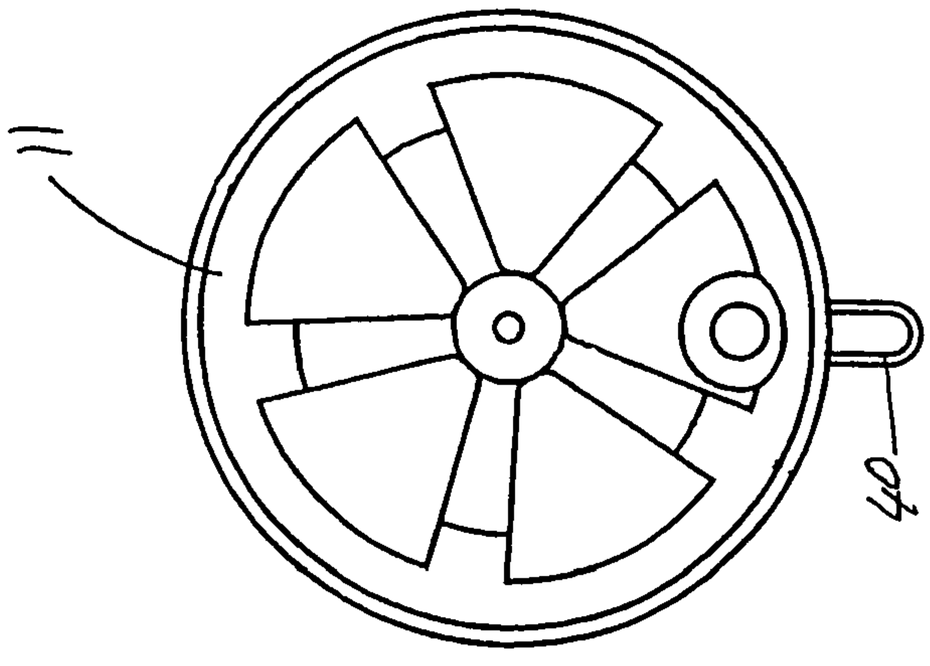


FIGURE 2A

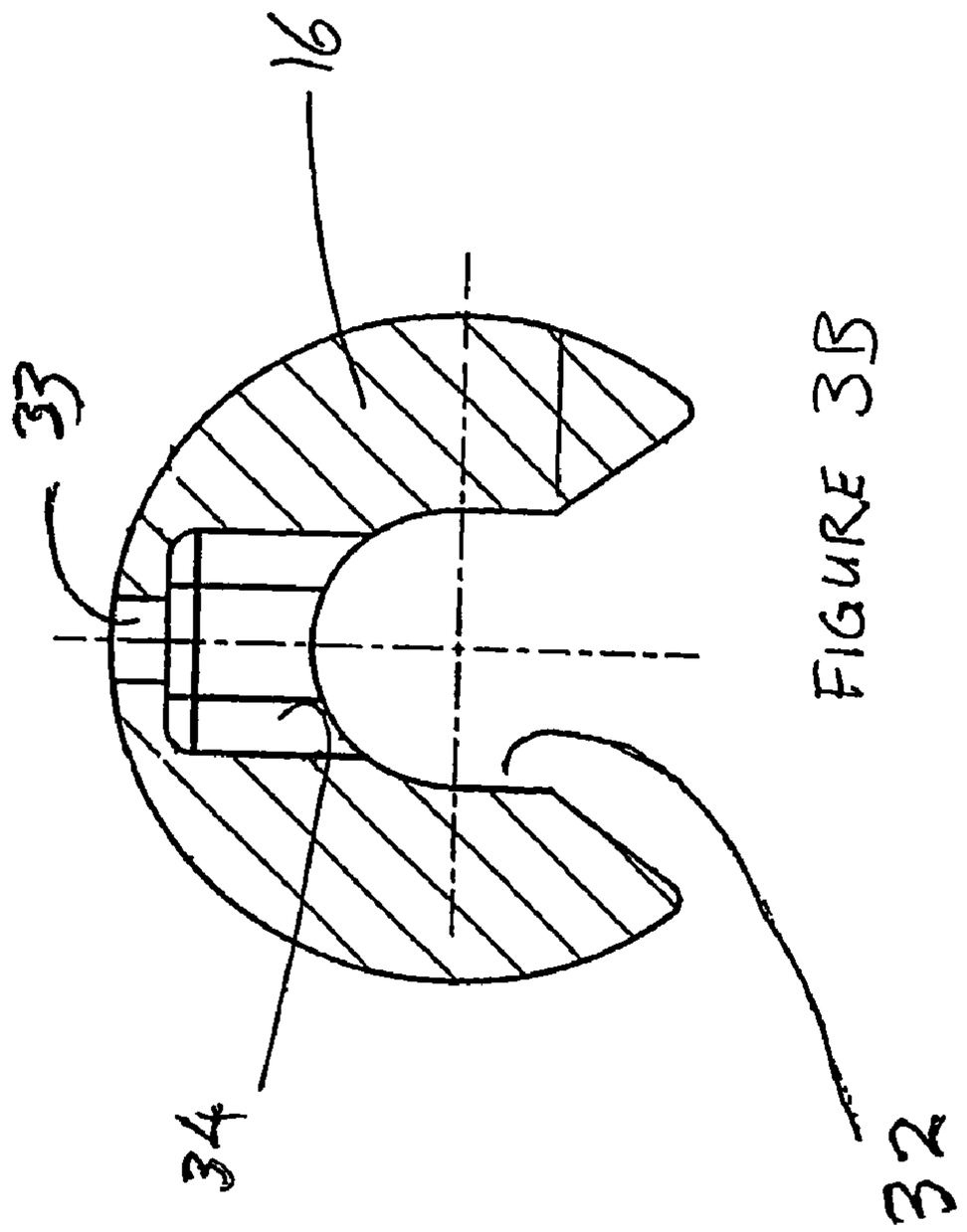


FIGURE 3B

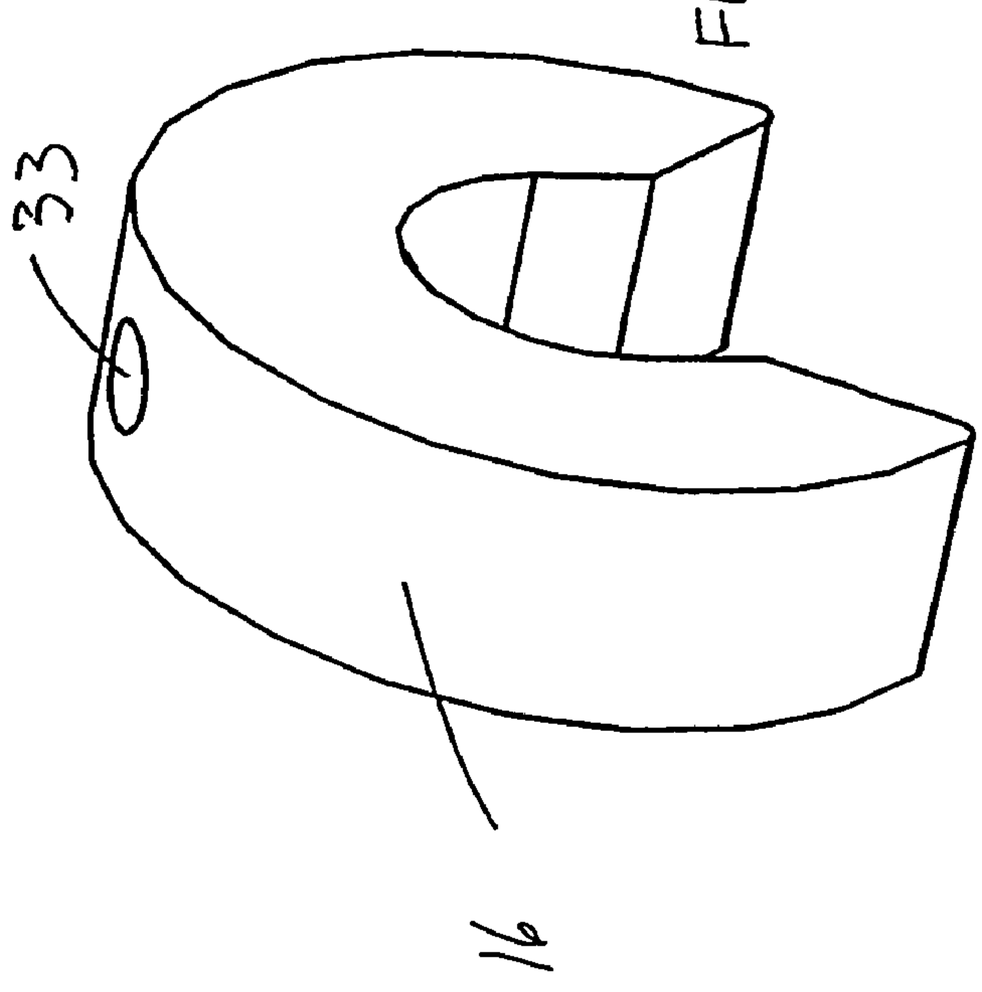


FIGURE 3A

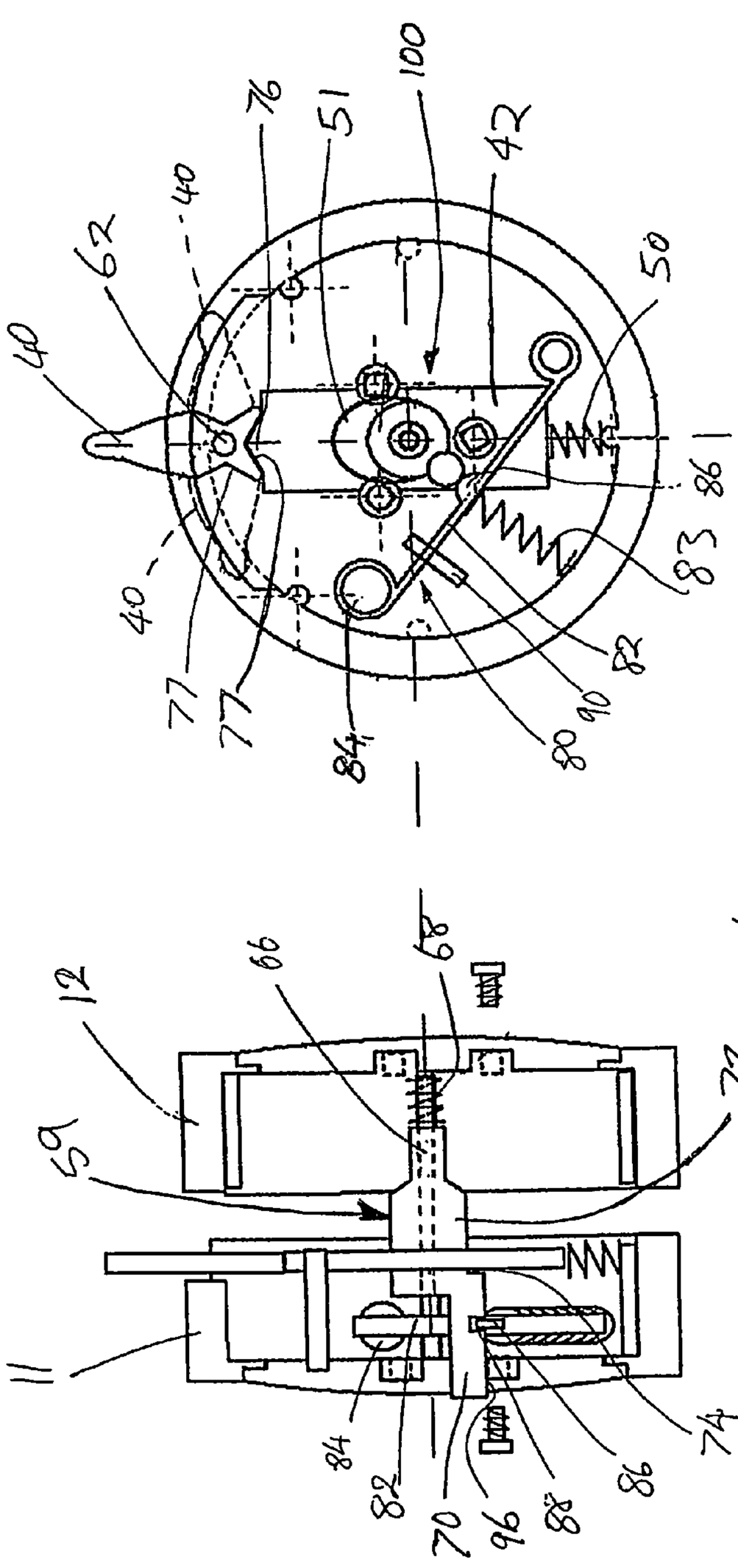


FIGURE 4B

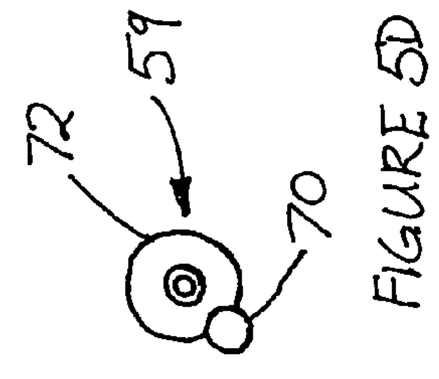


FIGURE 5D

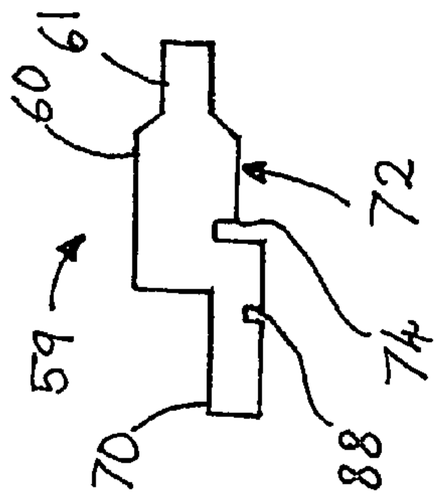


FIGURE 5C

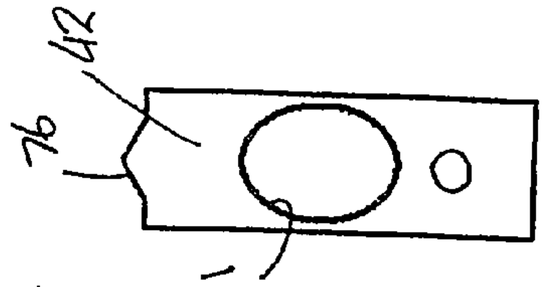


FIGURE 5B

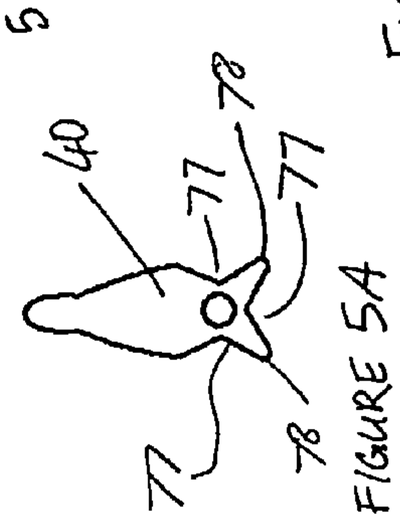


FIGURE 5A

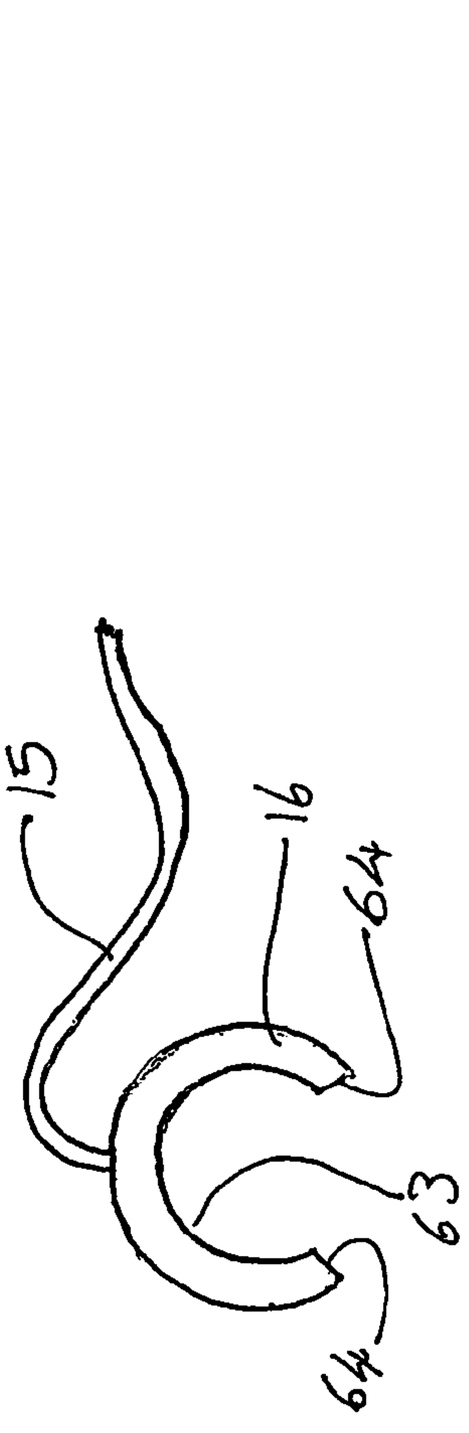


FIGURE 5E

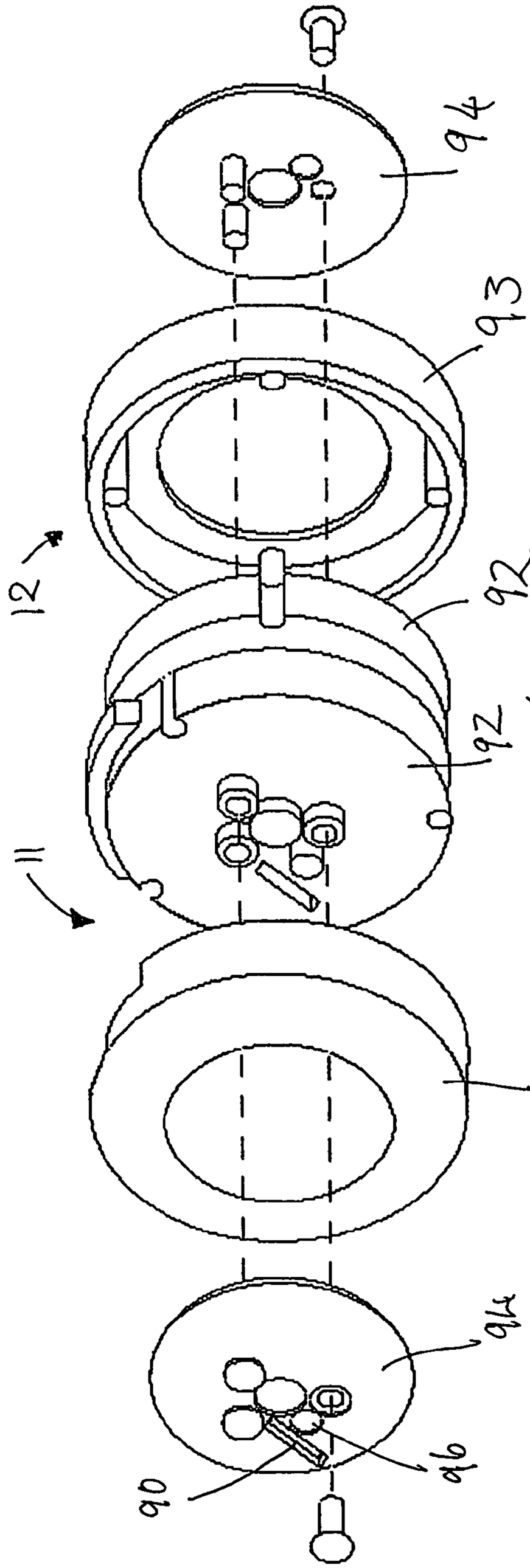


FIGURE 6

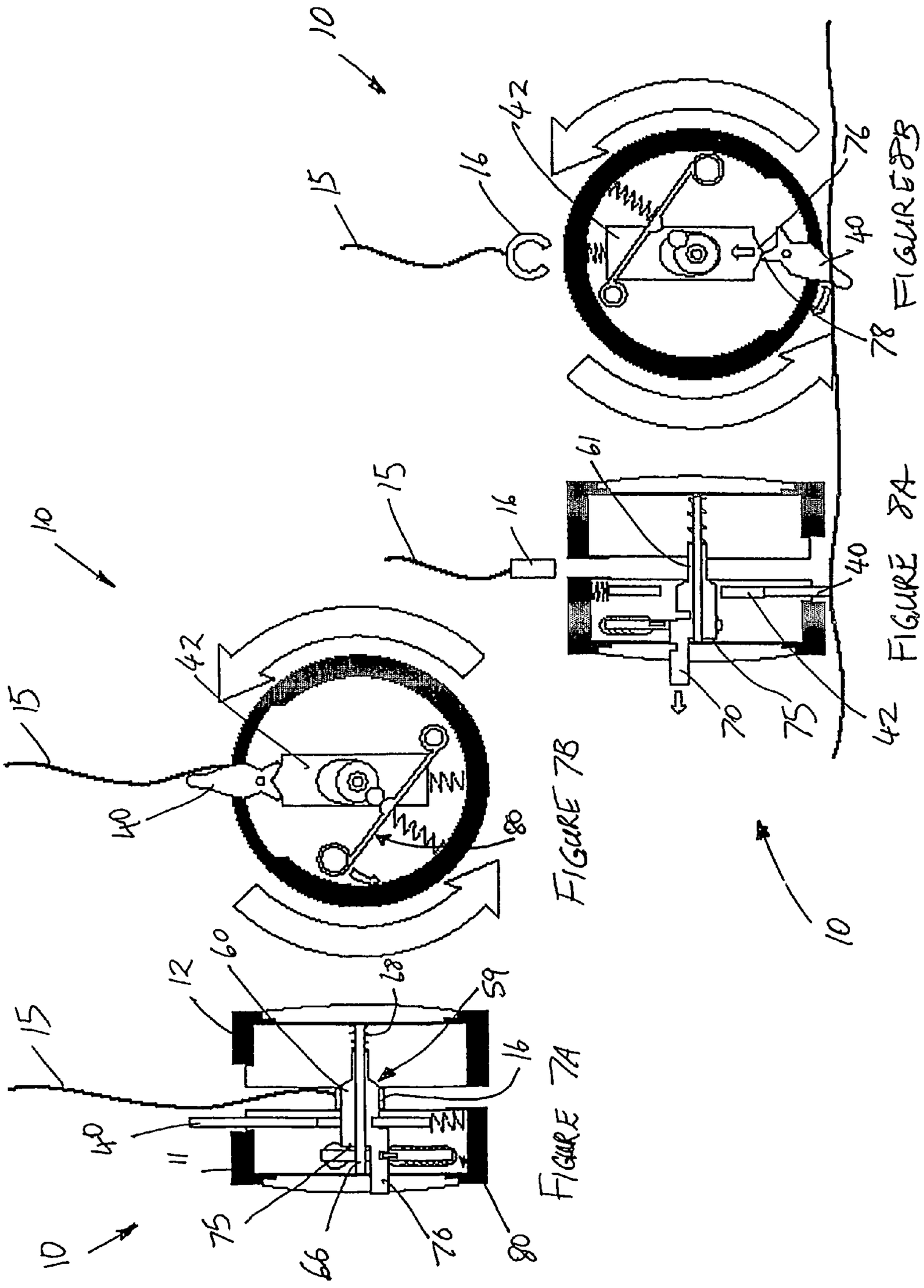


FIGURE 8B

FIGURE 8A

FIGURE 7B

FIGURE 7A

SPINNING TOY

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a spinning toy, and particularly to a yo-yo type toy.

2. Description of Related Art

In their simplest form yo-yo's have been known since ancient times. The traditional yo-yo design comprises a spool where two disc bodies are attached by an axle. A length of string is securely tied to the axle or, in more modern designs, the string is looped around the axle to allow free movement of the string relative to the spinning spool.

More sophisticated yo-yo designs aim to increase game flexibility and play 'tricks' by reducing spinning friction and introducing 'sleeping' action, which is where a user is able to make a yo-yo spin on the end of its string without winding back up. These designs may include mounting the axle on a ball bearing assembly or adding a centrifugal clutch that has the effect of automatically winding the string back onto the yo-yo.

The present spinning toy achieves an even greater flexibility of game playing.

SUMMARY OF THE INVENTION

In one aspect of the present invention there is a spinning toy comprising a pair of spaced disc bodies joined by a transverse shaft forming a gap therebetween, a string attached to the shaft in the gap whereby the toy can be spun on the string, and a release mechanism for releasing the attachment of the string on the shaft while the toy is spinning.

In a further aspect of the present invention there is a method of using a spinning toy having a pair of spaced disc bodies connected by a transverse shaft forming a gap therebetween, and a string attached to the shaft in the gap, the method including:

spinning the connected disc bodies relative to the string by unwinding the disc bodies from the string;

lowering the spinning disc bodies towards a surface to activate a release mechanism that releases the string from the shaft; and

retaining hold of the string and allowing the disc bodies to freely roll along the surface.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is described further by way of example with reference to the accompanying drawings of which:

FIG. **1** is a perspective view of a spinning toy in accordance with a first embodiment of the present invention;

FIG. **2**A is a front profile of the first embodiment of a spinning toy;

FIG. **2**B is a side sectional view of the first embodiment;

FIG. **2**C is a sectional view of the spinning toy taken at line B—B of FIG. **2**B;

FIG. **3**A is a perspective view of a spindle of the first embodiment;

FIG. **3**B is a front sectional view of the spindle of FIG. **3**A;

FIG. **4**A is a side sectional view of a spinning toy according to a second embodiment of the invention;

FIG. **4**B is a front sectional view of the second embodiment of the spinning toy;

FIG. **5**A is a trigger of an embodiment of the spinning toy;

FIG. **5**B is a front view of a tab of an embodiment of the spinning toy;

FIG. **5**C is a side view of the shaft of an embodiment of the spinning toy;

FIG. **5**D is an end view of the shaft of FIG. **5**C;

FIG. **5**E illustrates a front view of a spindle in accordance with the second embodiment of the invention;

FIG. **6** is an exploded perspective view of the major components forming the second embodiment of the spinning toy;

FIG. **7**A is a side sectional view of an embodiment of the spinning toy spinning on the string;

FIG. **7**B is a front sectional view showing the embodiment of FIG. **7**A;

FIG. **8**A is a side sectional view illustrating an embodiment of the spinning toy with string detached; and

FIG. **8**B is a front sectional view of the embodiment of FIG. **8**A.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The embodiments of a spinning toy **10** illustrated in the drawings shows a yo-yo type toy that can function as a regular yo-yo to spin away from and back to a user's hand, but which also has a release mechanism **17** that will detach the string from the yo-yo when the yo-yo closely approaches a surface. Once the string is detached the yo-yo assumes the characteristics of a spinning wheel and rolls along the surface.

In a preferred embodiment the toy may be used as a regular yo-yo but has the option of switching to a state whereby a force on the circumference of the yo-yo will cause the string to detach and allow the remaining body of the yo-yo to roll and run free across the surface while the string remains behind in the hands of the user.

FIGS. **1** to **3**B illustrate a first embodiment of the spinning yo-yo toy **10**. The yo-yo comprises a pair of spaced disc bodies **11**,**12**, that are joined by a transverse shaft **13**, wherein the spacing between the disc bodies forms a circumferential gap **14**. A string **15** is detachably connected to the shaft by way of a spindle **16**.

As illustrated more particularly in FIG. **2** each disc body **11**,**12** is a hollow housing consisting of an outer cap **20** and an inner housing plate **21**. In the embodiment illustrated in FIGS. **2**A to **2**C shaft **13** is mounted transversely to span across central apertures **18**,**19** of both inner housing plates in disc bodies **11**, **12** respectively. One end of the shaft **13** is spring mounted onto a boss **22** on the interior of one of the outer caps **20**. At this end, shaft **13** contains an axial recess **24** which is mounted over boss **22** and into which spring **26** extends.

The other end of shaft **13** is provided with a flange **27** that prevents the shaft escaping from central aperture **18** in disc body **11**. This end of the shaft **13** may be secured tightly in central aperture **18** such that disc body **11** jointly moves with this end of shaft **13**. The shaft may be glued into the central aperture **18** or be made to fit tightly in the aperture.

Two catches **29** are located in concave indentations **30** at the center of each inner housing plate **21**. Catches **29** can be fixed one to each inner housing plate **21** adjacent aperture **18** or **19**, or the catches **29** are simply positioned above shaft **13**. Catches **29** are designed to hold the spindle **16** to which the string **15** is attached. Hence, spindle **16** is able to freely rotate about shaft **13** and is prevented from slipping therefrom by catches **29**.

In an alternative embodiment catches **29** are not necessary as the spindle **16** may be retained on shaft **13** simply by way of the concave indentations **30** at the center of each inner housing plate **21**. As illustrated in FIG. **2**B, gap **14** reduces as disc body **11** and **12** close so that the spindle **16** is retained between the two disc bodies but the string **15** can still pass through the gap **14**.

In the first embodiment, spindle **16** is a part circular clip with a semi-circular cut out center **32**. The spindle encircles the shaft by approximately 180° and semi circular centre **32** sits on shaft **13**. Centre **32** has a smooth, low friction surface to enable the spindle **13** to rotate about the shaft. A small aperture **33** at the top center of the spindle **16** opens into a larger aperture **34**, which opens into the cut out **32**. This configuration allows a string to be securely tied and connected to the spindle by threading the string through small aperture **33** and forming a knot at the string end which abuts against the larger aperture but is too large to slip through the smaller aperture **33**.

In this embodiment, the string **15** can only be detached from the shaft when the disc bodies **11**,**12** are separated far enough to allow the spindle **16** to slip away from the shaft through gap **14**. Release mechanism **17** is responsible for sufficiently separating the two disc bodies **11**,**12** to allow the spindle to escape from therebetween. Release mechanism **17** includes a trigger **40** and a release tab **42** that engages with a circumferential groove **44** on shaft **13**.

In the embodiment illustrated in FIGS. **2**A to **2**C, trigger **40** is a lever that extends radially from the circumference of disc body **12** and is retained in the walls of the disc body to pivot at the pivot point **43** located close to the circumference of the disc body. Specifically, the trigger **40** has a transversely extending short shaft **46** that is received to pivot at point **43** in aperture **48** in the outer cap **20** of disc body **12**. Referring to FIG. **2**C, the trigger **40** pivots from the outward position illustrated in solid lines by 90° to one of the "down" positions illustrated by the dashed lines.

Release tab **42** lies in the same plane as trigger **40** and is biased to abut up against trigger **40** by tab spring **50** mounted in the interior circumference of disc body **12**. Release tab **42** has a large rounded aperture **51** through which shaft **13** extends. A second smaller aperture **52** on the tab receives a screw **54** that fixes into inner housing plate **21** of disc body **12** to stably hold the release tab **42** in position. Release tab **42** is designed to shift in a planar direction against spring **50** in response to rotation of trigger **40**. Apertures **51** and **52** are shaped so that release tab **42** can still move with respect to shaft **13** and screw **54**.

The purpose of release tab **42** is to maintain shaft **13** in an axially restrained position against shaft spring **26**. It does this by engaging an edge of aperture **51** in groove **44** of shaft **13** when the release tab is a rest position. The rest position is illustrated in FIGS. **2**B and **2**C where an edge of aperture **51** engages with groove **44** of the shaft to retain the shaft in the transverse position illustrated in FIG. **2**B.

By pivoting trigger **40** lower shoulders **41** of trigger **40** are caused to push up against release tab **42** against the force of tab spring **50**. This then moves aperture **51** relative to shaft **13** to disengage the release tab **42** from groove **44** of shaft **13**. When release tab **42** has entirely disengaged from shaft **13** the potential force stored in shaft spring **26** will cause the shaft to move across laterally thereby moving disc body **11** away from disc body **12** and increasing the gap between two disc bodies. A widening of gap **14**, as mentioned above, allows spindle **16** to be released from its position on shaft **13** and hence string **15** to be disconnected from the main disc body part of the spinning toy **10**.

Trigger **40** is actuated when it encounters a force that causes it to pivot from its outwardly protruding position. The start position is illustrated in FIG. **2**C. When a user spins the yo-yo up and down on the string trigger **40** will pivot when the spinning discs **11**,**12** come close to or in contact with a surface. The angular force of the spinning trigger hitting the surface will cause the trigger to pivot to one of the "down" positions illustrated in dash lines in FIG. **2**C.

As trigger **40** pivots one of the lower shoulders **41** will cause tab **42** to release the shaft and widen the gap **14** between the two bodies to release the spring. Typically, in a game play this is best achieved when the yo-yo is "sleeping". While "sleeping" the user moves the spinning yo-yo close to a surface, such as the floor. As the yo-yo approaches the floor the trigger **40** hits the floor before the peripheral circumference of disc bodies **11**,**12**. The force of the contact with the floor causes the trigger to pivot thereby releasing the string from the shaft between the disc bodies. With the string released the yo-yo travels across the surface, and if performed skillfully, in the manner of a rolling wheel.

String detachment and re-attachment of the present toy provides an added dimension of play over a regular yo-yo. The present spinning toy may continue to be used solely as a regular yo-yo: the string detachment feature can be deactivated by manually pivoting trigger **40** to the "down" position where the trigger does not protrude from the circumference of the disc body **12**. Lower shoulders **41** of trigger **40** are designed such that they only cause release tab **42** to shift when the trigger has pivoted approximately 45° on either side of upright. At a pivoted movement of 90° the trigger does not apply a force against release tab, and the tab remains in the rest position firmly engaging shaft **13**. Hence, the yo-yo can be played as a regular yo-yo with trigger **40** safely positioned inside the circumference of the spinning disc bodies.

FIGS. **4**A to **8**B illustrate a second embodiment of the spinning toy **10**. As illustrated in FIG. **6**, this embodiment contains two disc bodies **11**,**12** consisting of an inner housing plate **92**, and an outer rim **93** containing outer cap **94**. A transverse shaft **59** extends transversely through the co-axial centres of discs **11** and **12**.

However, shaft **59** in this embodiment is shaped differently from the first embodiment and the spindle **16** relies on a different technique for detachment from the shaft **59**. Shaft **59** is illustrated in FIGS. **5**C and **5**D and spindle **16** is illustrated in FIG. **5**E. At a main spinning portion **72** the shaft has a large diameter **60** adjacent a small shaft diameter **61**.

In this embodiment shaft **59**, during normal yo-yoing conditions, exposes the large shaft diameter **60** in gap **14**. In order to release the spindle **16** from the shaft, the release mechanism activates to shift shaft **13** axially to expose the small shaft diameter **61** in gap **14**. The spindle **16** is shaped such that when large shaft diameter **60** is exposed in the gap **14**, the spindle maintains its attachment on the shaft. However, as the shaft is shifted to expose the small shaft diameter the spindle is freed from the shaft.

Turning to FIG. **5**E, spindle **16** takes form of a "C" shaped circular member. The spindle encircles the shaft by more than 180° but less than 360° so that the large diameter **60** extends comfortably through an internal opening **63** of spindle **16** but a gap exists to allow the smaller diameter to slip out of the internal opening **63**. On the large diameter **60** spindle **16** is unable to slip radially off the shaft. However, the small shaft diameter **61** is made smaller than the distance between the ends **64** of the spindle so that the spindle can slip radially off the small shaft diameter **61**.

Turning back to FIG. **4**A, in this embodiment shaft **59** is spring mounted on axle **66** that extends centrally from one disc body to the other. Spring **68** is mounted on axle **66** to abut against one end of shaft **59** in disc body **12**. Extending into disc body **11**, shaft **59** has a radial step **75** in a manner to continue extending shaft **59** along a secondary leg **70** that lies on an axis that is parallel to the axis of the main spinning portion **72** of the shaft **59**. Secondary leg **70**, being offset to the central axle **66**, rotates about the axle **66**.

Release mechanism **100** as illustrated in FIG. **4**B and in this embodiment operates along the same principles as with the first embodiment. All similar features are referenced using the same reference numerals as used for the first embodiment.

Release mechanism **100** includes a release tab **42** spring mounted on tab spring **50** against a circumferential interior of disc body **11**. The aperture **51** of release tab **42** in this embodiment is oval (as illustrated in FIGS. **4**B and **5**B) and the edge of the aperture is designed to engage with a recess **74** of shaft **59**. The top end of release tab **42** that abuts against trigger **40** has a projection **76** that complementary engages with a holding recess **77** in trigger **40**.

Trigger **40** is illustrated in FIG. **5**A and includes three such holding recesses **77** defined by two lower shoulders **41** at the pivot point **62** end of trigger **40**. Recesses **77** are designed to maintain release tab **42** in a more stable rest position regardless of whether the trigger **40** is extending radially from the circumference of the yo-yo or is in a "down" position as illustrated by the dashed lines in FIG. **4**B. As trigger **40** is rotated through 90° from the extended position to the down position, one of the lower shoulders **78** will exert a force against release tab **42** pushing it against tab spring **50** in order to release tab **42** from recess **74** of shaft **59**. Releasing the shaft **59** in this manner will cause the shaft to move axially under the force of shaft spring **68** and towards a direction to the left of the view illustrated in FIG. **4**A.

However, in this embodiment even with the disengagement of shaft **59** from release tab **42** the shaft will not immediately shift axially because a clutch **80** is provided as a safety measure to prevent movement of the shaft **59** unless the correct conditions are achieved. The correct conditions to be achieved in order to release the string from the shaft are:

(1) the disc bodies are spinning at a sufficiently high speed to reach a predetermined centrifugal force to release clutch **80**; and

(2) the trigger, when extended, encounters a force sufficient to make the trigger pivot.

Clutch **80** is best illustrated in FIG. **4**B. It is defined by an elongated arm **82** that extends across a segment of the interior of one of the disc bodies **11**,**12**, which in this case is disc body **11**. Clutch arm **82** is spring mounted by clutch spring **83** at an approximate centre of the arm to an internal circumference of disc body **11**. One end **84** of the arm is weighted with a metal weight or the like. Hence, as the yo-yo spins the centrifugal force inside disc body **11** causes clutch arm **82**, and particularly weighted and **84**, to move towards the circumference of the disc body. Clutch **80** engages with the secondary leg **70** of shaft **59** by way of a lug **86** located on one side of clutch arm **82**. Lug **86** engages with a lug recess **88** in secondary leg **70**. Lug **86** is positioned approximately on the other side of clutch arm **82** from clutch spring **83**.

An opening **90** in the outer cap **94** of disc body **11** allows a user to manually push down clutch arm **82** to disengage clutch **80** from shaft **59**. This feature may be useful, for example, where after string disconnection the shaft **59** is locked back into position but inadvertently without first placing the spindle on the shaft. By inserting a pointed object through cap opening **90** the clutch **80** can be disengaged from the shaft **59** and trigger **40** may be pivoted to allow the release mechanism to release shaft **59** thereby exposing the small shaft diameter **61** which will allow a user to reinsert spindle **16** onto the shaft **59**. Without this feature it would be difficult to unlock shaft **59** and reinsert spindle **16**.

As shaft **59** is released and shifts to reveal to the small diameter **61**, the secondary leg **70** projects further out of a corresponding aperture **96** in outer cap **94** of disc body **11**.

FIGS. **7**A and **7**B illustrate in front and side sectional views the spinning yo-yo toy **10** in a yo-yo operating condition. In this condition the string **15** by way of spindle **16** is attached to shaft **59** to rotate relative to the shaft. Slowly spinning, the trigger **40** is illustrated in an extended position, release tab **42** is engaged with shaft **59** and clutch **80** is also engaged with shaft **59**.

FIGS. **8**A and **8**B illustrate the yo-yo reaching a relatively high rotational speed and being lowered close to the ground. As the circumference of the yo-yo nears the ground trigger **40** comes into contact with the ground and pivots about pivot point **62** which causes lower shoulder **41** to move release tab **42** up against tab spring **50** thereby releasing from engagement shaft **59**. Simultaneously, the centrifugal force created by the spinning disc bodies causes the weighted end **84** of clutch arm **82** to urge away from shaft **59** thereby disengaging clutch **80** from shaft **59**.

When both the release mechanism **17** and clutch **80** are disengaged from shaft **59**, the shaft is free to move under the force of shaft spring **68** to expose the small shaft diameter **61** from which spindle **16** can detach. To prevent complete separation of the disc bodies, shaft **59** is prevented from escaping entirely from disc body **12** by step **75**.

Once detached from the string the yo-yo will continue to rotate under an inertia force and roll along the ground. To reassemble the yo-yo, the string on the spindle is mounted back onto the small shaft diameter **61** and in that position the secondary leg **70** of shaft **59** is pushed inward of disc body **11**, in the direction opposite to the arrow illustrated in FIG. **8**A, to mount the spindle back onto the large shaft diameter **60**. In an alternative embodiment the two disc bodies may be entirely separable or manually pulled further apart to facilitate mounting of the spindle on the shaft.

While the present spinning yo-yo toy can operate without a clutch **80**, a clutch is preferred for the sake of safety. Clutch **80** prevents shaft **59** from moving if release mechanism **100** is activated in a child's hand or while the yo-yo is not spinning.

The present spinning toy adds an extra playing dimension to yo-yo's as they are currently known. In addition to the normal versatility of yo-yo toys, the present spinning toy allows the creation of new tricks and raises the level of skill in commanding a yo-yo. One of the added game skills involves smooth and accurate release of the string to encourage the rolling discs to travel as far as possible.

Variations to the internal working mechanisms of the yo-yo are possible for achieving the same result of disconnecting the string while the yo-yo is in play. Two different embodiments have already been described and further variations conceivably fall within the spirit and scope of the spinning toy as defined by the claims.

The invention claimed is:

1. A spinning toy comprising a pair of spaced disc bodies connected by a transverse shaft forming a gap therebetween,

a string attached to a spindle wherein the spindle is coupled to the shaft in the gap such that the disc bodies can be spun relative to the string, and a release mechanism for uncoupling the spindle from the shaft while the toy is spinning thereby separating the string and spindle from the disc bodies.

2. The spinning toy claimed in claim **1**, wherein the release mechanism protrudes radially from the circumference of one of the disc bodies and is activated to release the string from the shaft in response to a force on the release mechanism.

3. The spinning toy claimed in claim **1**, wherein the string is affixed to the spindle through an aperture in the spindle.

4. The spinning toy claimed in claim **2**, wherein the string is affixed to the spindle through an aperture in the spindle.

5. The spinning toy claimed in claim **1**, wherein the release mechanism urges the shaft to move axially to release the spindle from the shaft and thereby allow the string to detach from the shaft.

6. The spinning toy claimed in claim **5**, wherein one end of the shaft is spring mounted inside one of the disc bodies.

7. The spinning toy claimed in claim **5**, wherein the spindle is captured between the disc bodies and held therebetween on the shaft, and whereby an axial movement of the shaft widens the gap between the disc bodies, hence releasing the spindle.

8. The spinning toy claimed in claim **7**, wherein catches in the gap assist in holding the spindle on the shaft.

9. The spinning toy claimed in claim **5**, wherein the shaft is provided with two different sized diameters, wherein the spindle is attached to the shaft at the larger diameter and axial movement of the shaft exposes the smaller diameter thereby allowing the spindle to detach from the shaft.

10. The spinning toy claimed in claim **1**, wherein the release mechanism includes a trigger protruding from the circumference of one of the disc bodies and a biased tab moveable in response to movement of the trigger, whereby movement of the tab releases the shaft to axial movement.

11. The spinning toy claimed in claim **10**, wherein the tab has an elongate or large round opening through which the biased shaft extends and is held therein.

12. The spinning toy claimed in claim **10**, wherein the trigger is a lever pivoted to the disc body containing the release mechanism.

13. The spinning toy claimed in claim **1**, wherein the trigger is a lever pivoted to the disc body containing the release mechanism.

14. The spinning toy claimed in claim **1**, further including a clutch engageable with the shaft that prevents axial movement of the shaft, and that disengages from the shaft, when the spinning toy achieves a predetermined centrifugal forces.

15. The spinning toy claimed in claim **14**, wherein the clutch is weighted and spring mounted to an interior circumference of a disc body.

16. The spinning toy claimed in claim **15**, wherein the clutch is an elongate arm that is spring mounted to the interior circumference of the disc body at an approximate center of the arm and has a lug at an approximate center that engages with a complementary slot in the shaft such that the clutch releases the shaft when centrifugal forces cause the clutch to move toward the interior circumference.

17. The spinning toy claimed in claim **12**, wherein the trigger pivots approximately 90° in either direction from an extended position to a down position.

18. The spinning toy claimed in claim **7**, wherein the spindle is a part circular shape that encircles the shaft by approximately 180°.

19. The spinning toy claimed in claim **9**, wherein the spindle is a part circular shape that encircles the larger diameter of the shaft by more than 180° but less than 360°.

20. A method of using a spinning toy having a pair of spaced disc bodies connected by a transverse shaft forming a gap therebetween, and a string attached to a spindle wherein the spindle is coupled to the shaft in the gap, the method including:

spinning the connected disc bodies relative to the string by unwinding the disc bodies from the string;

lowering the spinning disc bodies towards a surface to activate a release mechanism that releases the string from the shaft thereby separating the string and spindle from the disc bodies; and

retaining hold of the string while allowing the disc bodies to freely roll along a surface.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 7,059,932 B1
APPLICATION NO. : 10/512032
DATED : June 13, 2006
INVENTOR(S) : Tobias et al.

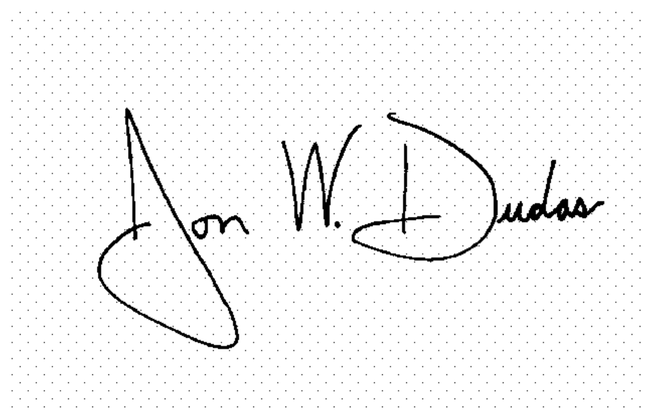
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Face of the Patent, See Item (57) ABSTRACT, line 3, "A sting is attached" should read -- A string is attached --

Column 8, Line 8, Claim 14, "forces" should read -- force --

Signed and Sealed this

Tenth Day of October, 2006



JON W. DUDAS
Director of the United States Patent and Trademark Office